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| 09/575,553      | 05/22/2000  | Joseph L. Hellerstein | YOR000140US1        | 1280             |

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EXAMINER

HOLMES, MICHAEL B

ART UNIT PAPER NUMBER

2121

DATE MAILED: 08/10/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/575,553

Applicant(s)

HELLERSTEIN ET AL.

Examiner

Michael B. Holmes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_



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## Examiner's Detailed Office Action

1. This **Final Rejection Office Action** is in response to the communication received on **January 7, 2004**, Amendment under 37 CFR § 1.111. Reconsideration and allowance of the present application **09/575,553** are respectfully requested by applicant. All such supporting documentation has been placed in applicant's file.
2. **Claims 1-31 have not been amended.**
3. Applicant's arguments have been fully considered but they are **not** persuasive.
4. Examiner **maintains** the Title 35 USC § 102 (b) rejection mailed October 03, 2003, paper #4, the complete text has been included below.

## Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-31** are rejected under **35 U.S.C. 102(b)** as being anticipated by

**Lang et al. (USPN 5,867,799), Filed: April 4, 1996; Date of Patent: February 2, 1999.**

**Regarding claim 1:**

*Lang et al.* teaches

- Apparatus for recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the apparatus comprising: at least one processor operative to:
  - (i) obtain the one or more remote procedure calls [(col. 13, line 17-26 “FIG.1”)];
  - and (ii) recognize one or more end-user transactions from the one or more remote procedure calls based on training data associated with one or more of the remote procedure calls [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]; and a memory, coupled to the at least one processor, for storing at least a portion of results associated with the end-user transaction recognition operation. [(col. 13, line 17-26 “FIG.1”)]

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**Regarding claim 2:**

*Lang et al.* teaches

at least one processor is further operative to perform the end-user transaction recognition operation by: (i) segmenting the one or more remote procedure calls into end-user transaction segments [(col. 10, line 6-67 “*To provide a basis for adaptation ... then averaged to get a prototype vector for the category.*”)]; (ii) extracting end-user transaction features for each segment [(col. 10, line 6-67 “*To provide a basis for adaptation ... then averaged to get a prototype vector for the category.*”)]; and (iii) computing the one or more end-user transactions from the extracted end-user transaction features for each segment using a model generated from the training data. [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]

**Regarding claim 3:**

*Lang et al.* teaches

the model is a Bayes Net model. [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]

**Regarding claim 4:**

*Lang et al.* teaches

at least one processor is further operative to perform the end-user transaction computing operation by: (i) assigning a feature value to the corresponding extracted features, the feature value being associated with the Bayes Net model [(col. 11, line 1-65 “*The advantages to taking*

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*this approach ... at least once in document d.*”]; (ii) finding a posterior probability distribution for each feature value [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”]; and (iii) selecting a feature value to represent one or more end-user transactions based on the posterior probability distribution. [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]

**Regarding claim 5:**

*Lang et al.* teaches

the feature value selection operation comprises selecting the most likely feature value for a given extracted feature to represent one or more end-user transactions. [(col. 10, line 6-67 “*To provide a basis for adaptation ... then averaged to get a prototype vector for the category.*”)]

**Regarding claim 6:**

*Lang et al.* teaches

the selected feature values form a class label representative of one or more end-user transactions. [(col. 10, line 61-67 “*Using TF-IDF and the cosine similarity metric ... then averaged to get a prototype vector for the category.*”)]

**Regarding claim 7:**

*Lang et al.* teaches

at least a portion of the results are compared to a quality metric to determine whether the results are of a sufficient quality. [(col. 10, line 61-67 “*Using TF-IDF and the cosine similarity metric*

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*... then averaged to get a prototype vector for the category.”]*

**Regarding claim 8:**

*Lang et al.* teaches

- Apparatus for generating a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the apparatus comprising: at least one processor operative to: (i) obtain one or more remote procedure calls labeled with one or more end-user transactions [(col. 13, line 17-26 “FIG.1”)]; (ii) compute one or more selected features on which the model is to be trained from the labeled remote procedure calls, the one or more selected features being labeled with the one or more end-user transactions [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]; and (iii) construct the model from the selected features [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]; and a memory, coupled to the at least one processor, for storing at least a portion of results associated with one or more of the model generating operations. [(col. 13, line 17-26 “FIG.1”)]

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**Regarding claim 9:**

*Lang et al.* teaches

the one or more labeled remote procedure calls are manually generated. [(col. 13, line 17-26  
“FIG.1”)]

**Regarding claim 10:**

*Lang et al.* teaches

the one or more labeled remote procedure calls are automatically generated. [(col. 13, line 17-26  
“FIG.1”)]

**Regarding claim 11:**

*Lang et al.* teaches

at least one processor is further operative to construct the model by: (i) learning dependencies between the computed features to form a model structure [(col. 12, line 46-54 “*An additional pragmatic advantage ... for an actual document can quickly be computed.*”)]; and (ii) learning one or more model parameters given the structure to form the model. [(col. 12, line 55 to col. 13, line 11 “*One method for learning at least one of the TF-IDF and the MDL approaches ... similarly to test informons.*”)]

**Regarding claim 12:**

*Lang et al.* teaches

the model is a Bayes Net model. [(col. 11, line 1-65 “*The advantages to taking this approach ...*”)]



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*at least once in document d.”]*

**Regarding claim 13:**

*Lang et al.* teaches

- Apparatus for automatically generating training data used to construct a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the apparatus comprising: at least one processor operative to: (i) cause the client workstation to mark the beginning and end of one or more end-user transactions originating at the client workstation [(col. 6, line 66 to col. 7 line 18 “*The invention herein provides ... entity.*”)]; and (ii) correlating the end-user transaction marks with the one or more remote procedure calls received at the server to generate remote procedure calls labeled with end-user transactions, the labeled remote procedure calls serving as the training data [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]; and a memory, coupled to the at least one processor, for storing at least a portion of results associated with one or more of the training data generating operations. [(col. 13, line 17-26 “FIG.1”)]

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**Regarding claim 14:**

*Lang et al.* teaches

the at least one processor is further operative to download a marking agent to the client workstation for use in marking the end-user transactions. [(col. 13, line 17-26 “FIG.1”)]

**Regarding claim 15:**

*Lang et al.* teaches

A method of recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the method comprising the steps of obtaining the one or more remote procedure calls [(col. 13, line 17-26 “FIG.1”)]; and recognizing one or more end-user transactions from the one or more remote procedure calls based on training data associated with one or more of the remote procedure calls. [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]

**Regarding claim 16:**

*Lang et al.* teaches

the end-user transaction recognition step comprises: (i) segmenting the one or more remote procedure calls into end-user transaction segments; [(col. 10, line 6-67 “To provide a basis for adaptation ... then averaged to get a prototype vector for the category.”)] (ii) extracting end-user transaction features for each segment [(col. 10, line 6-67 “To provide a basis for adaptation ...

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*then averaged to get a prototype vector for the category.”]); and (iii) computing the one or more end-user transactions from the extracted end-user transaction features for each segment using a model generated from the training data. [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]*

**Regarding claim 17:**

*Lang et al.* teaches

the model is a Bayes Net model. [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]

**Regarding claim 18:**

*Lang et al.* teaches

the end-user transaction computing step comprises: (i) assigning a feature value to the corresponding extracted features, the feature value being associated with the Bayes Net model [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]; (ii) finding a posterior probability distribution for each feature value [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]; and (iii) selecting a feature value to represent one or more end-user transactions based on the posterior probability distribution. [(col. 11, line 1-65 “The advantages to taking this approach ... at least once in document d.”)]

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**Regarding claim 19:**

*Lang et al.* teaches

the feature value selection step comprises selecting the most likely feature value for a given extracted feature to represent one or more end-user transactions. [(col. 10, line 6-67 “*To provide a basis for adaptation ... then averaged to get a prototype vector for the category.*”)]

**Regarding claim 20:**

*Lang et al.* teaches

the selected feature values form a class label representative of one or more end-user transactions.

[(col. 10, line 61-67 “*Using TF-IDF and the cosine similarity metric*

*... then averaged to get a prototype vector for the category.*”)]

**Regarding claim 21:**

*Lang et al.* teaches

at least a portion of the results are compared to a quality metric to determine whether the results

are of a sufficient quality. [(col. 10, line 61-67 “*Using TF-IDF and the cosine similarity metric*

*... then averaged to get a prototype vector for the category.*”)]

**Regarding claim 22:**

*Lang et al.* teaches

- A method of generating a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote

procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the method comprising the steps of: obtaining one or more remote procedure calls labeled with one or more end-user transactions [(col. 6, line 66 to col. 7 line 18 "*The invention herein provides ... entity.*"); computing one or more selected features on which the model is to be trained from the labeled remote procedure calls, the one or more selected features being labeled with the one or more end-user transactions; and constructing the model from the selected features. [(col. 11, line 1-65 "*The advantages to taking this approach ... at least once in document d.*");]

**Regarding claim 23:**

*Lang et al.* teaches

the one or more labeled remote procedure calls are manually generated. [(col. 13, line 17-26 "FIG.1")]

**Regarding claim 24:**

*Lang et al.* teaches

the one or more labeled remote procedure calls are automatically generated. [(col. 13, line 17-26 "FIG.1")]

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**Regarding claim 25:**

*Lang et al.* teaches

the model constructing step comprises: (i) learning dependencies between the computed features to form a model structure [(col. 12, line 46-54 “*An additional pragmatic advantage ... for an actual document can quickly be computed.*”)]; and (ii) learning one or more model parameters given the structure to form the model. [(col. 12, line 55 to col. 13, line 11 “*One method for learning at least one of the TF-IDF and the MDL approaches ... similarly to test informons.*”)]

**Regarding claim 26:**

*Lang et al.* teaches

the model is a Bayes Net model. [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”)]

**Regarding claim 27:**

*Lang et al.* teaches

- A method of automatically generating training data used to construct a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, the method comprising the steps of causing the client workstation to mark the beginning and end of one or more end-user transactions originating at the client workstation [(col. 6, line 66 to col. 7 line 18 “*The invention herein*”]

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*provides ... entity.”]); and correlating the end-user transaction marks with the one or more remote procedure calls received at the server to generate remote procedure calls labeled with end-user transactions, the labeled remote procedure calls serving as the training data. [(col. 11, line 66 to col. 12, line 10 “Generally, one way to derive a probability estimate ... correlation estimate ... “)]*

**Regarding claim 28:**

*Lang et al.* teaches

the causing step comprises downloading a marking agent to the client workstation for use in marking the end-user transactions. [(col. 13, line 17-26 “FIG.1“)]

**Regarding claim 29:**

*Lang et al.* teaches

- An article of manufacture for recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, comprising a machine readable medium containing one or more programs which when executed implement the steps of obtaining the one or more remote procedure calls [(col. 6, line 66 to col. 7 line 18 “*The invention herein provides ... entity.*”) and (col. 13, line 17-26 “FIG.1“)]; and recognizing one or more end-user transactions from the one or more remote procedure calls based on training data associated with one or more

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of the remote procedure calls. [(col. 11, line 1-65 "*The advantages to taking this approach ... at least once in document d.*") and (col. 13, line 17-26 "FIG.1")]

**Regarding claim 30:**

*Lang et al.* teaches

- An article of manufacture for generating a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, comprising a machine readable medium containing one or more programs which when executed implement the steps of obtaining one or more remote procedure calls labeled with one or more end-user transactions [(col. 6, line 66 to col. 7 line 18 "*The invention herein provides ... entity.*") and (col. 13, line 17-26 "FIG.1")]; computing one or more selected features on which the model is to be trained from the labeled remote procedure calls, the one or more selected features being labeled with the one or more end-user transactions [(col. 11, line 1-65 "*The advantages to taking this approach ... at least once in document d.*") and (col. 13, line 17-26 "FIG.1")]; and constructing the model from the selected features. [(col. 11, line 1-65 "*The advantages to taking this approach ... at least once in document d.*") and (col. 13, line 17-26 "FIG.1")]



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**Regarding claim 31:**

*Lang et al.* teaches

- An article of manufacture for automatically generating training data used to construct a model for use in recognizing one or more end-user transactions originating at a client workstation from one or more remote procedure calls, corresponding to the one or more end-user transactions, received at a server in communication with the client workstation, comprising a machine readable medium containing one or more programs which when executed implement the steps of: causing the client workstation to mark the beginning and end of one or more end-user transactions originating at the client workstation [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”) and (col. 13, line 17-26 “FIG.1”)]; and correlating the end-user transaction marks with the one or more remote procedure calls received at the server to generate remote procedure calls labeled with end-user transactions, the labeled remote procedure calls serving as the training data. [(col. 11, line 1-65 “*The advantages to taking this approach ... at least once in document d.*”) and (col. 13, line 17-26 “FIG.1”)]

## Response to Argument(s)

7. As aforementioned, applicant has failed to amend the claims to overcome the prior art (*Lang et al.* USPN 5,867,799) rejection, and thus, examiner maintains the aforesaid rejection. Applicant argues “Lang fails to disclose the recognition of end-user transactions from remote procedure calls based on training data associated with remote procedure calls.”

Examiner disagrees with this assessment. Figure 1, discloses a internetwork or distributed network resource in which conceivably remote analysis can be implemented e.g., user #2, item 7. Moreover, *Lang et al.* discloses the use of training sets (C 12, L 55-65). The association is set forth in (C 13, L 17-26) of which said association can be conceived of a training data or stream conveyed through the global internet or distributed resource system from user #2 to user #1 or resource #1 or user #3 to resource #2. (C 13, L 17-26 & C 15, L 6-11) *Examiner's note:* It is considered that the remote procedure calls are a transaction, and that the “end user” must be recognized for this transaction to occur. If a call is made from one user to another a recognition must occur.

## Examiners Summary

8. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### Correspondence Information

9. Any inquiries concerning this communication or earlier communications from the examiner should be directed to **Michael B. Holmes** who may be reached via telephone at **(703) 308-6280**. The examiner can normally be reached Monday through Friday between 8:00 a.m. and 5:00 p.m. eastern standard time.

If you need to send the Examiner, a facsimile transmission regarding After Final issues, please send it to **(703) 746-7238**. If you need to send an Official facsimile transmission, please send it to **(703) 746-7239**. If you would like to send a Non-Official (draft) facsimile transmission the fax is **(703) 746-7240**. If attempts to reach the examiner by telephone are unsuccessful, the **Examiner's Supervisor, Anthony Knight**, may be reached at **(703) 308-3179**.

Any response to this office action should be mailed too:

**Director of Patents and Trademarks Washington, D.C. 20231**. Hand-delivered responses should be delivered to the Receptionist, located on the fourth floor of **Crystal Park II, 2121 Crystal Drive Arlington, Virginia**.

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Anthony Knight  
Supervisory Patent Examiner  
Group 3600

***Michael B. Holmes***

Patent Examiner

Artificial Intelligence

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United States Department of Commerce  
Patent & Trademark Office